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ABSTRACT

This publication reports background information, a rationale, and a proposed state system for classification and retrieval of vocational-technical education curriculum materials for Alabama - a result of the state/federal-funded project entitled "Vocational Education Curriculum Operation--Management Plan" (VO-ED COMP). Major components of the recommended system are listed: planning, organizing, acquisition, processing, storage/filing, retrieval, and evaluation. Service is discussed from the viewpoint of a central focus, permeating all components. An automated, machine-readable documentation procedure is recommended, along with a centralized vocational-technical curriculum resources library. Recommendations for staffing and procedures for implementing and operating the library are made and sample forms are appended. (Author/CT)

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A CLASSIFICATION AND RETRIEVAL SYSTEM FOR VOCATIONAL-TECHNICAL EDUCATION CURRICULAR MATERIALS IN ALABAMA

PROJECT NO: AL-RD2-A7-029

Publication #5 of
Project VO-ED COMP
(Vocational Education Curriculum Operation--Management Plan)

by

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in cooperation with

The Division of Vocational Education
Alabama Department of Education

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ABSTRACT

This publication reports background information, a rationale, and a proposed State system for classification and retrieval of vocational-technical education curriculum materials for Alabama. It is a result of the State/Federally-funded project entitled, "Vocational Education Curriculum Operation - Management Plan" (VO-ED COMP). Project staff utilized a review of literature, responses from a survey of 940 agencies and institutions and consultations with library personnel to formulate the system model.

The system was built upon the foundation of information science. Service to clients was seen as the primary objective. Much of the general framework for the system was adapted from the body of knowledge surrounding vocational information dissemination (The ERIC and RCU systems).

Major components of the recommended system are: Planning, Organizing, Acquisition, Processing, Storage/Filing, Retrieval, and Evaluation. Service is viewed as a central focus, permeating all components. An automated, machine - readable documentation procedure is recommended along with a centralized vocational-technical curriculum resources library. Recommendations for staffing and procedures for implementing and operating the library are made and sample forms are appended.

FOREWORD

A well-planned curriculum, which incorporates the multi-media approach for the use of instructional materials, will enable the vocational-technical teacher to provide the kind of learning experiences and opportunities to enable the student to achieve educational objectives most effectively and efficiently. A coordinated, systematic, state-wide effort is necessary before such a curriculum can become a reality.

VO-ED COMP, Vocational Education Curriculum Operation--Management Plan, a state-funded project conducted by the Department of Vocational and Adult Education, Auburn University, Auburn, Alabama, was designed to develop a coordinated curriculum management plan for Vocational-Technical Education in Alabama.

In order to accomplish this mission, two major objectives were proposed:

1. To determine priorities for curriculum development and curriculum management functions in Vocational-Technical Education in the State; and
2. To develop a coordinated curriculum development and management plan for Vocational-Technical Education in Alabama.

A total of ten enabling objectives were developed, seven under objective one, and three under objective two. This paper will address both enabling objectives under major objective two, which state.

A. To identify and/or develop an operational model for classifying, sequencing and systematizing curricular information and materials in vocational-technical education.

B. To develop operational procedures for collecting, classifying and evaluating the content of curricular information and materials, including materials needed for special groups of learners enrolled in occupational subjects at all levels.

The writers are grateful to a number of people whose help made this publication possible: to Mr. Bob Schremser, Consultant for Networks, Alabama Public Library Service, whose suggestions gave early guidance to formulation of the system; to the Project Steering Committee, Messrs. A. C. Allen, James Beckham, John Blackwell, Bob Boshell, R. O. (Bob) Bugg, E. L. Dyess, Earl Gates, J. Robert Hollis, James Kendrick, Dr. George Martin, Dr. Douglas Patterson, Dr. Prince Preyer, William Reitz, Dr. Cayce Scarborough, Bob Schremser, Dr. George Stephens and Ms. J. Sue Smith and Ms. Eleanor Johnston; to the Project Monitor, Dr. Douglas Patterson; to the Project Evaluators, Dr. Paul Scott and Mr. Lee Morris, University of Georgia; to Susan Crowder for cover design art work; and finally to Ms. Flossi Blake, Mrs. Lorene Burleson, and Ms. Paula Walls for a fine job of word processing!

BACKGROUND/RATIONALE FOR A STATE VOCATIONAL-TECHNICAL EDUCATION CURRICULUM RETRIEVAL SYSTEM

The Scientific Approach to Information Management

Information is essential to decision-making. As organizations grow in size and in density, there is a concomitant need for improved information systems.

Information Science

Information science is a relatively new field encompassing an interdisciplinary core of knowledge dealing with such topics as information system theory and design, man-machine relationships, language data processing, mechanization of library processes, language applications of computers, information storage and retrieval, information display, automatic publishing, command and control, and information control.

Role of Computers

Much of the progress in information science is due to the demands of technology, which, in effect, caused a geometric increase in knowledge. Computer technology was developed in answer to the need for computational speed and accuracy; however, its users soon adapted the versatile machine to information activities which went beyond quantitative data. Thus the computer, in the hands of information scientists, promises to control the "flood" of information by utilizing systems, centers and services.

In education, the computer is used in two ways: 1) As a <u>data</u> retrieval system which is geared to input, manipulate, store and retrieve data on operations, financing, pupil personnel, etc., and 2) As an <u>information</u> retrieval system which

has similar functions, but the object of which is retrieval of recorded concepts and ideas. If the system retrieves complete publications, it is called a document retrieval system; if only citations or abstracts, it is called a reference retrieval system. The system may be utilized to do all of these functions in the sequence: document numbers, citations and then complete texts.

The Alternative to Computers

Prior to computers, all data and information retrieval systems were manual; it is likely that "hand operated" systems will continue into the future, until such a time when all potential user groups have ready access and the skills and desire to use machine (computerized) systems.

Information Utilization

A more refined system of retrieval is known as information dissemination and utilization; which is concerned with clients' absorbtion--a problem in most systems.

A schematic view of information systems serving the field of education can be seen in Figure 1 (page 3).

Some basic premises[1] upon which information dissemination systems are built, are as follows:

1. Dissemination and utilization of knowledge require deliberate mechanisms (information dissemination systems) which will assist in effecting the transfer of information.
2. The information dissemination system should be planned, operated, and evaluated in a cyclical pattern to insure continuous improvement.

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[1]Celiana I. Taylor and Joel Magisos, "Guide for State Vocational-Technical Education Information Dissemination Systems," The Center for Vocational and Technical Education, Ohio State University, Columbus, Ohio, 1971. (ED048503), p. 10.

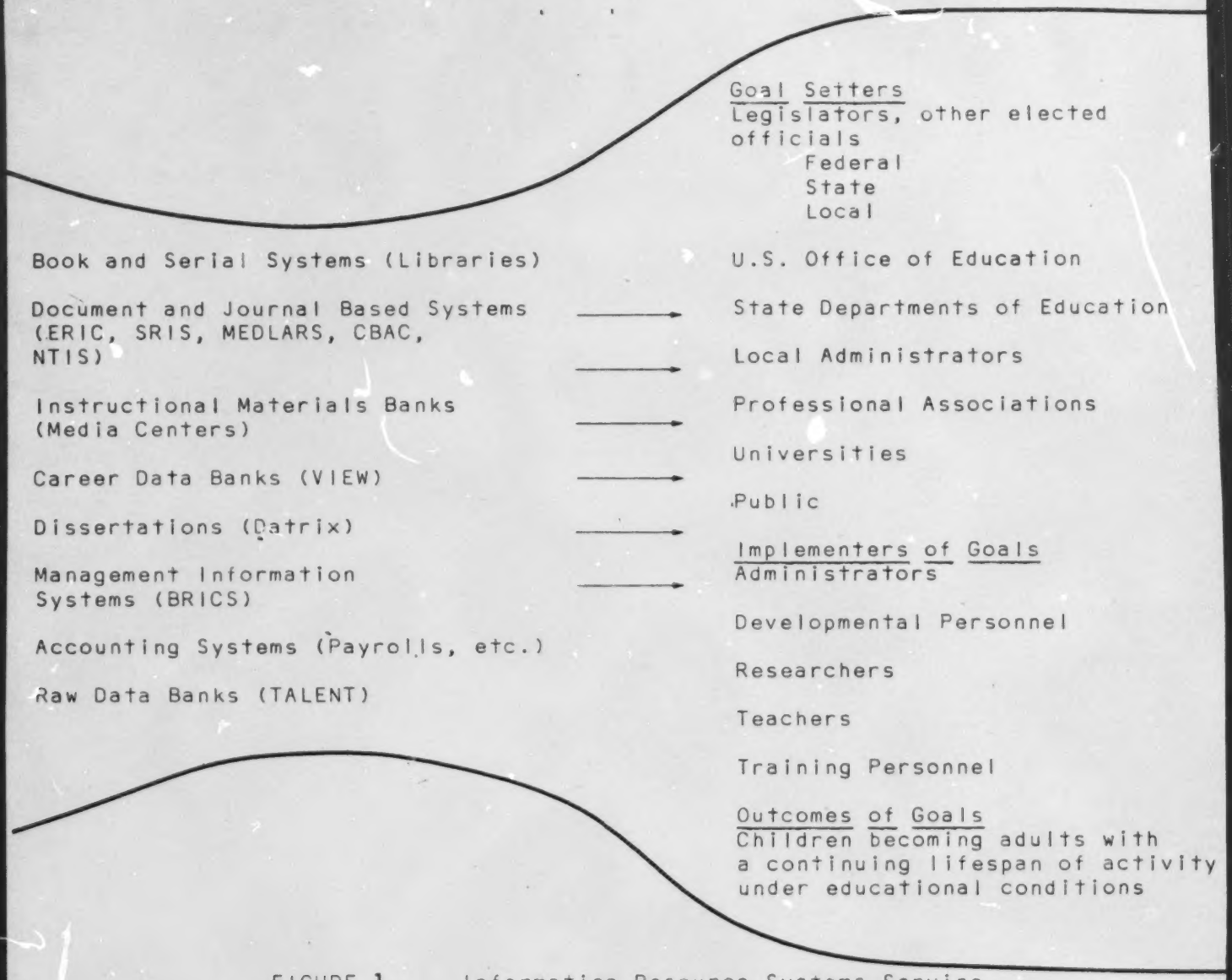

FIGURE 1. Information Resource Systems Serving the Field of Education

3. The objectives of the information dissemination system should be based upon the information needs derived from the significant problems of important user groups.

4. The operation and evaluation of the information dissemination system should be supportive of the objectives.

5. The conduct of a state information dissemination system is most effective and efficient when linked and articulated with an appropriate larger information system.

A model of a general information system proposed by Yovits and Ernst[2] is seen in Figure 2 (page 5). Information in the system is defined as data of value in decision making. The system is composed of four functions:

1. Information acquisition and dissemination.
2. Decision making.
3. Execution.
4. Transformation.

A more specific, user-oriented information system model[3] may be reviewed in Figure 3 (Page 6). Based on this model, a number of guidelines[4] were developed for use and testing.

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[2]M. C. Yovits and R. L. Ernst, Generalized Information Systems: Some Consequences for Information Transfer (Columbus, Ohio, The Ohio State University, Computer and Information Science Research Center, 1968), (OSU-CISRC-TR-68-1).

[3]Celiana I. Taylor and Joel Magisos, op cit, p. 24.

[4]Ibid, pp. 25-30.

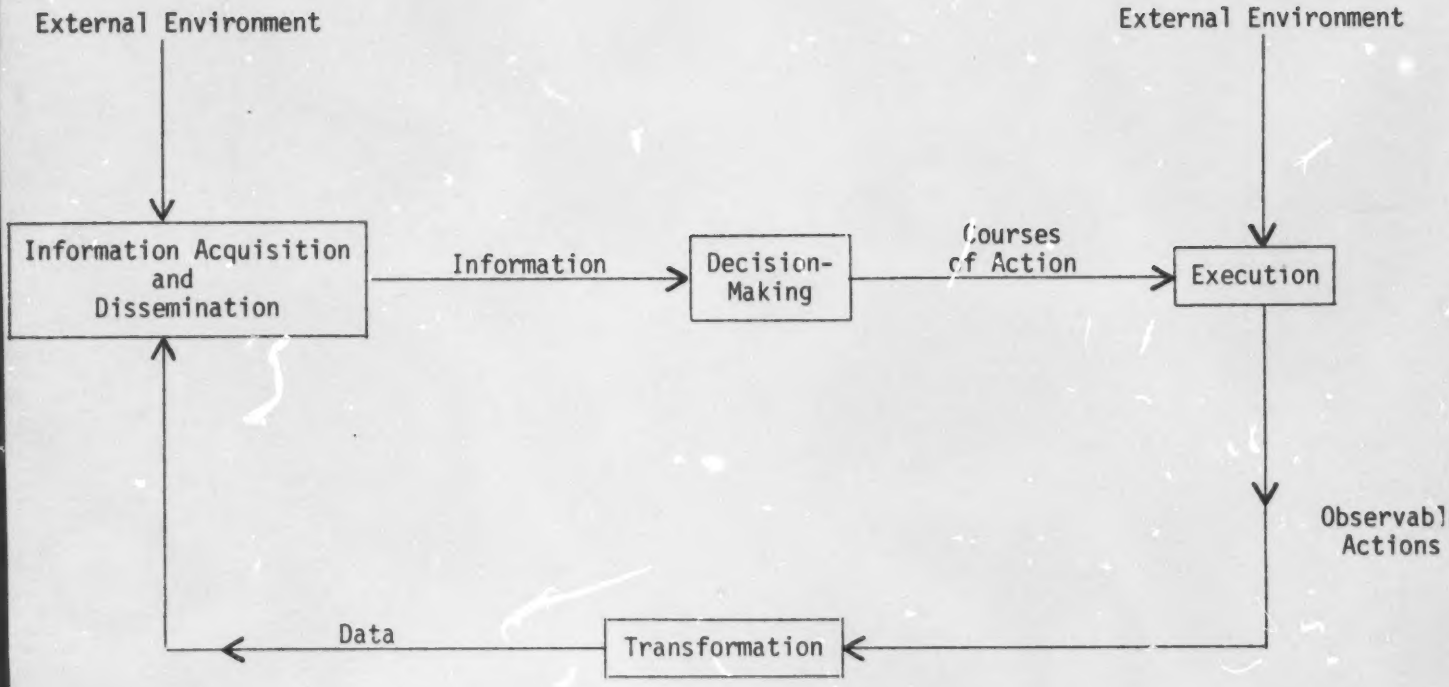

FIGURE 2. A GENERALIZED INFORMATION SYSTEM[3]

[5] M. C. Yovits, Ibid, p. 42.

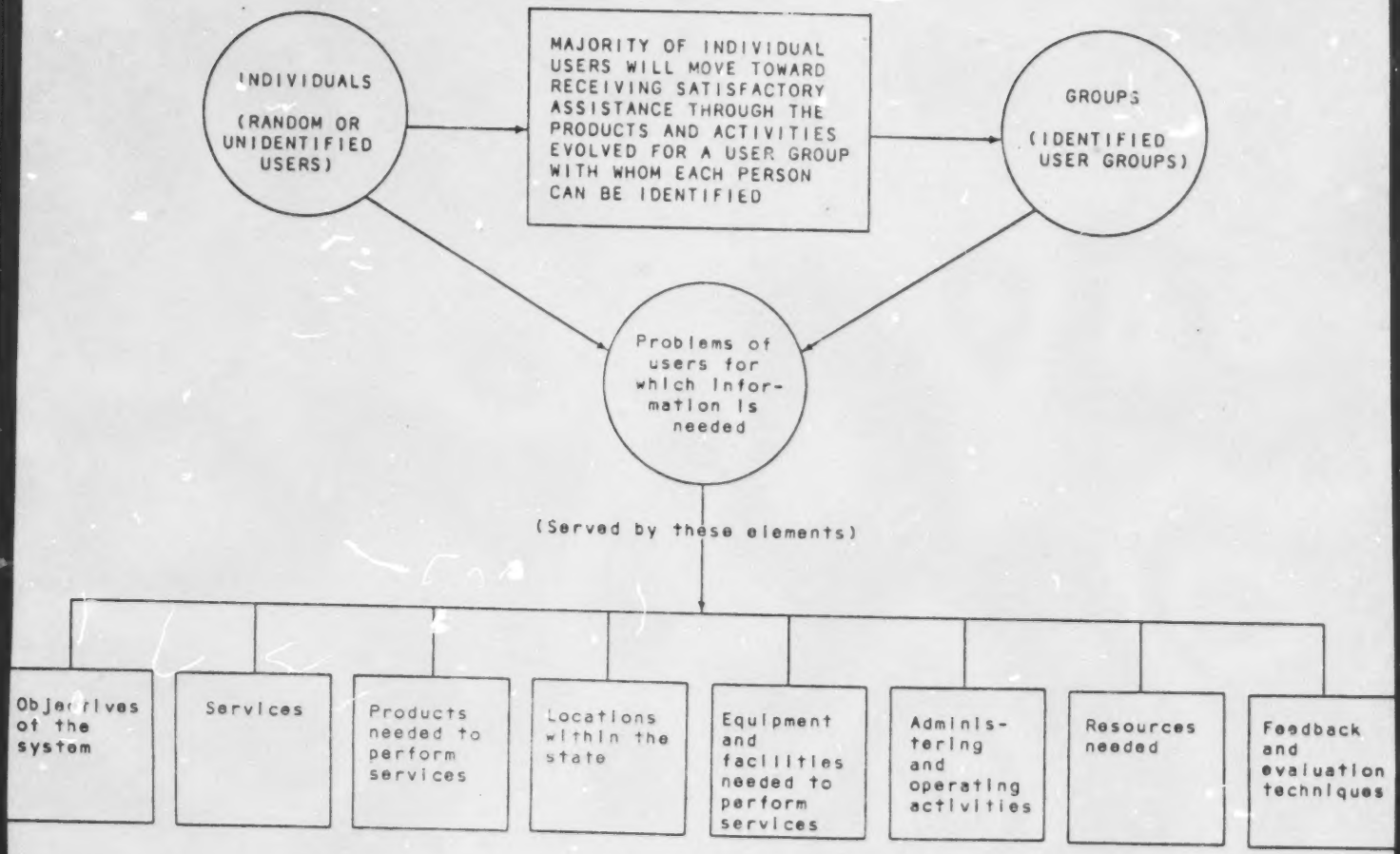
INDIVIDUALS
(RANDOM OR UNIDENTIFIED USERS)
MAJORITY OF INDIVIDUAL USERS WILL MOVE TOWARD RECEIVING SATISFACTORY ASSISTANCE THROUGH THE PRODUCTS AND ACTIVITIES EVOLVED FOR A USER GROUP WITH WHOM EACH PERSON CAN BE IDENTIFIED
GROUPS
(IDENTIFIED USER GROUPS)
Problems of users for which information is needed
(Served by these elements)
Objectives of the system
Services
Products needed to perform services
Locations within the state
Equipment and facilities needed to perform services
Administering and operating activities
Resources needed
Feedback and evaluation techniques

FIGURE 3. Conceptualization of Information Dissemination System Elements Necessary to Serve Users

Guiding Principles For A State Dissemination System

Objectives:

1. Long-term objectives and short-term goals of the dissemination system should be developed.
2. Development, review, and updating of objectives should be part of a cyclical program planning process.
3. Identification of problems and servicing of resulting information needs of user groups within the substantive area covered by the information dissemination system should be a primary objective.
4. An advisory body should be enlisted to assist with the development of objectives.
5. Objectives of a state information dissemination system should take into consideration the objectives of the national system to which it relates, the statutory and regulatory provisions in the state, the organizational and structural variables between and within institutions, and the resources and requirements of the state.
6. The information dissemination system program should be planned, organized, operated, evaluated, and updated upon the basis of short-term and long-term objectives.
7. Evaluation of an information dissemination system should be upon the basis of objectives.
8. Indicators should be identified which are sufficiently precise that assessment of progress can be made.

Individual and Group Users

1. Individual and group users should be periodically identified, grouped, and classified, and priorities of the established user groups reviewed periodically.

(Principles, continued)

2. Service to group users should be emphasized to lessen repetitive effort and increase resources available for solution of the unique problems of individual users.
3. The information dissemination system should have the capacity to identify the diverse roles of the individual user and have the capability either to serve or to refer the user to an appropriate agency.
4. An information dissemination system should be developed in such a way that an individual is able to identify the levels of access and to use the system by himself.
5. Levels of access into the use of an information dissemination system should be clearly delineated and described for users.
6. Methods of interface with individual users should facilitate effective problem formulation and solution finding.

Problems and Resulting Information Needs

1. Problems and resulting information needs should be identified, grouped, and categorized.
2. Identification of problems and resulting information needs should be a continuous process involving users.
3. Assignment of priorities to problems and resulting information needs is necessary and should involve those to be affected.
4. The information dissemination system should be designed to permit development of products and services in identified problem areas and to provide an interpersonal relationship with users according to appropriate priorities.

Services

1. A variety of services is necessary to meet the diverse problems and information needs of users.

(Principles, continued)

2. Needs of user groups should be the basis for services to be provided within the information dissemination system resources and other available services.
3. Priority should be given to providing services which will impact upon the vocational-technical education program mission.
4. Services of other information agencies should be identified, articulated, and utilized.
5. Legal and fiscal policies of federal and state governments should be considered when planning services.
6. Services for decentralized locations should be well defined and well coordinated with the clearly identified multilevel functions within the total system.

Products

1. A variety of products is necessary to meet the diverse problems and information needs of users.
2. Products of ERIC, VT-ERIC, and other ERIC clearinghouses should be utilized.
3. Appropriate products of other information systems should be identified and used.
4. Priority for product development should be related to urgent and crucial user problems and information needs.
5. Needed additional products should be developed by the agency best qualified to do so.
6. Copyrights and other legal aspects of duplication should be honored.

Location

1. Location of an information dissemination system within each state should be upon the basis of: a) location of high priority user groups, the dispersion

(Principles, continued)

or density of a user group, the number, level and characteristics of their demands; b) proximity of complimentary information systems, or a comprehensive state information service; c) organizational structure of the sponsoring agency; and d) statutory provisions within the state.

2. Placement of an information dissemination system within the total organizational structure should be at the point where the most effective information dissemination can be performed.
3. Decentralization of an information dissemination system should be based upon considerations of: a) budget, b) cooperative efforts with agencies at other locations, c) level of service feasible, d) volume of information, e) urgency for information, f) frequency of use of materials, g) form of information, h) availability of other sources of information, and i) identified multilevel functions.
4. Storage and retrieval systems maintained at decentralized locations should be compatible with other decentralized locations, all under the direction of or coordinated by the headquarters staff.

Equipment and Facilities

1. Equipment and facilities should be related to the type of: 1) products handled, 2) services rendered, and 3) users served.
2. Types of equipment acquired and used should be compatible with nationwide developments, notably the Educational Resources Information Center (ERIC) and its system of clearinghouses.
3. Orderly acquisition of equipment within the limits of budget allocations should be based upon stated objectives and priorities.

(Principles, continued)

4. Physical space for an information dissemination system should be determined upon the basis of needs for: 1) personnel, 2) users, 3) equipment, and 4) operations.
5. Use of equipment by users should be supervised in the interest of preserving equipment, enhancing its usefulness, and educating users.
6. General criteria should be established for selection of equipment, and specific criteria should be established for certain items of equipment.
7. Continuous updating of equipment should be accommodated in plans and budgets.

Evaluation and Feedback

1. Evaluation should be part of a continuous program planning cycle.
2. Methods of feedback and evaluation which are objective and have local relevance should be employed.
3. Feedback from individual and group users is a key source of data for evaluation.
4. Indicators used for assessment should be compatible with those used in the national system.
5. Evaluation at the state level should be compatible with evaluation of the larger information system (ERIC).
6. Evaluation of the effectiveness of the information dissemination system should be based upon the objectives of the system.
7. External review groups with some representation of user groups should be utilized at appropriate intervals.
8. Improvement of the system should result from evaluation.
9. Periodic evaluation of methods utilized in the feedback and evaluation processes is needed.

(Principles, continued)

Resources

1. Allocation of resources should be congruent with the organizational structure, objectives, and planned level of services and products.
2. Funds should be allocated upon the basis of justified need and scope of operation commensurate with overall policies and regulations.
3. Priorities for allocations of resources should reflect policies, needs, and desired effectiveness.
4. Personnel should be employed who are qualified to perform the services, maintain the system, and improve operations.

Administering and Operating Activities

1. Planning, organizing, controlling, and updating should be balanced for optimum effectiveness and efficiency of the system.
2. Levels of responsibility and delegation of authority should be identified and assigned.
3. Accountability for responsibilities and application of authority should be clearly understood.
4. A network for acquiring information materials needs to be established within a state by the information dissemination system staff and coordinated with efforts of Central ERIC and VT-ERIC.
5. A system of cataloging information materials which are not included in the national system should be developed and made compatible with the primary national system to which a linkage has been established.
6. Search strategies should be developed to locate information in the system.
7. A systematic and continuing program to train users of the system should be conducted.

(Principles, continued)

8. Information services and products should serve an impact upon high priority users.
9. Uniformity in coding and defining should be sought with the state and national systems.

Information Management in Vocational-Technical Education

In vocational-technical education, as in other fields, available information has grown tremendously in recent years. The ERIC (Educational Resource Information Center) system has helped to meet this burgeoning information growth. VT-ERIC is the clearinghouse for vocational-technical and career education at the Center for Research in Vocational-Technical Education, in Columbus, Ohio. VT-ERIC collects, abstracts, indexes and disseminates research and related educational information. Information documents, microfiche, AIM/ARM publications and computerized storage of documents are major products.

An essential component of any information system is a means for moving service to the user; VT-ERIC utilizes two means to serve the needs from the field--direct (by mail, telephone, in-person contacts) and by referral of requests to agencies that can best meet the requester's needs.

The Research Coordinating Unit (RCU) is the primary information collection and dissemination agency for vocational education in each state. This may be broadly or narrowly applied, depending on the respective State Plan. Regardless of the level of activity, the RCU is the major cooperating agency in the VT-ERIC system. A diagram of state and national relationships may be seen in Figure 4.

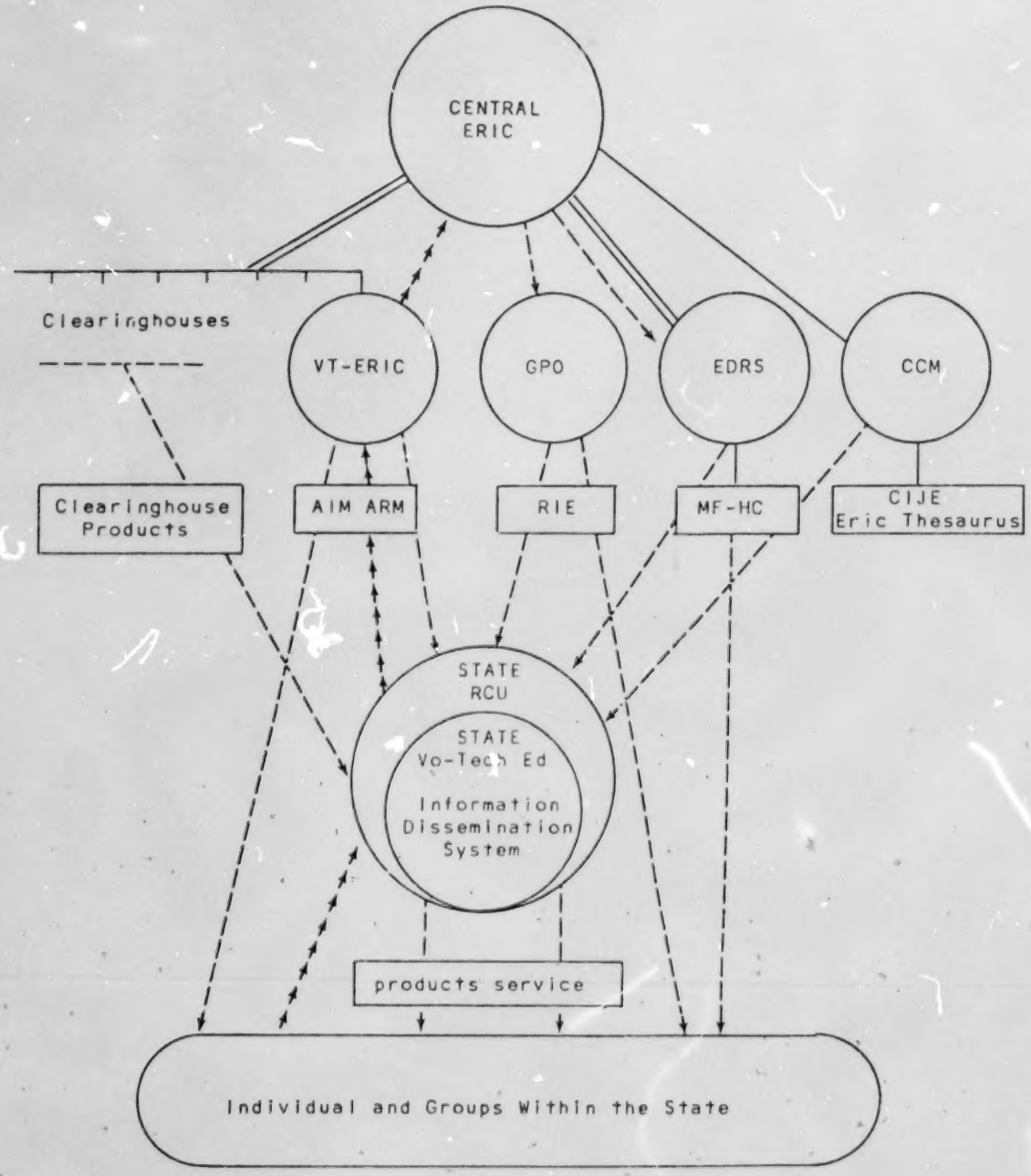

FIGURE 4

Diagram of the Relationship Between the State Vocational-Technical Information System and the National System

Celiana I. Taylor and Joel Magisos, Guide for State Vocational-Technical Education Information Dissemination Systems, Columbus, Ohio, Center for Vocational-Technical Education, 1971, p. 53.

Recommended objectives and program components[6] for a state vocational-technical information dissemination system are:

1. To acquire appropriate documents, maintain a document bank and establish access to other relevant materials through cooperative efforts with other agencies.
   a. To develop and maintain an understanding of the mission of vocational-technical education nationally and in that particular state.
   b. To establish and maintain a linkage with an appropriate national information system.
   c. To acquire or maintain access to appropriate data and/or document banks.
   d. To establish and maintain a surveillance network which will assist in identification and input of significant materials into the national and state information systems.
   e. To establish and maintain a storage capacity for information not available through national systems which involves acquiring, selecting, abstracting, and indexing these materials (compatible with the national system).
2. To disseminate relevant materials that serve the needs of identified high priority user groups and individuals.
   a. To identify and classify user groups and determine priority ranking as recipients of dissemination activities.
   b. To determine significant problems of major user groups and resulting information needs.
   c. To develop and maintain a search capacity for retrieval of information.

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[6]Taylor and Magisos, Ibid, pp. 31-33.

d. To serve users and user groups by:

1. Providing abstracts and bibliographies which assist the user with his identified problems and information needs.
2. Making significant resource materials (microfiche or hard copy) available to users within the state (or region) whenever needed.
3. Providing an active list of recognized consultants whom users can contract for assistance.
4. Providing information about new programs in the state and other exemplary programs.

3. To assist in the diffusion of educational concepts.

a. To provide educational seminars of courses on the use of the information dissemination system.

b. To develop and maintain linkages with user groups, particularly the high priority user groups.

c. To disseminate alternative concepts concerned with the problems, issues, or missions of identified user groups as a result of the linkages established with these groups.

d. To interpret and summarize results of research practitioners and decision-makers in high-priority user groups.

e. To develop capacity to serve individual users on an interpersonal basis.

f. To issue publications which fill a void and are designed to meet a need identified by a high priority user group. Examples are newsletters, abstract publications, information analysis products.

4. To develop a feedback system and an evaluation program.
    a. To establish a feedback system which obtains data on user statisfaction and system effectiveness.
    b. To develop an evaluation program which utilizes outside reviewers.

A suggested program of an information dissemination system, listed in priority order of importance (except evaluation, which should be continuous), is as follows:

1. User group services.
    a. Searching activities for users.
    b. Provision of access to materials, equipment and facilities and/or provision of microfiche and/or hard copy.
    c. Education activities for users.
    d. Field visitation to user groups.
    e. Referral services.
    f. Current awareness activities.
2. Surveillance system for educational programs and information materials existent within the state.
3. Acquisition of materials.
4. Processing materials.
5. Producing information products.
6. Evaluation.

Implementation of a State Vocational-Technical Information Retrieval System

Regardless of need, practicability and feasibility, implementation of new concepts, programs or services is seldom easy. Groups, individuals or

institutions often serve as "guardians of the status quo" when innovations are presented. These should be seen in their proper role, that is, of assuring continuity of quality and values from the established order. A realistic assessment of the relevant factors confronting implementation is needed. Some of the major factors[7] affecting implementation of a state vocational-technical education information retrieval system are:

1. Influence of power groups within the system--Influential people within the system must legitimize the plan before it can be implemented. Decision-makers in the State Department of Education, user groups and input agencies must all agree on the system.
2. Demonstrated advantage over competing activities--Either a review of similar systems or a well-documented proposal must be presented if the plan is to be approved and implemented.
3. Incentives--The kinds of incentives (financial, efficiency, facilitative, economy of personnel, etc.) will affect acceptance and implementation.
4. Flexibility to accommodate existing practices/facilities--Existing practices, where they do not conflict directly, should be included in the implementation plan. Changes should be made gradually and with full participation of all involved.
5. Involvement of personnel/agencies affected--Personnel and agencies accept new ideas more readily when they are involved in the decision-making process. Communication is the key.

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[7]Adapted from Installing a Coordinated Information Network in a State Education Agency: A Case Study of the Decision Process in New York. Columbus, Ohio: The Center for Vocational and Technical Education, R & D Series #67, 1972, pp. 65-66, 69.

(Factors affecting implementation, continued)

6. Magnitude of the program--The implementation plan must be of sufficient magnitude to secure full commitment of those individuals or agencies involved. The event must be seen as a major accomplishment.

A SYSTEM FOR VOCATIONAL-TECHNICAL EDUCATION
CURRICULUM CLASSIFICATION AND RETRIEVAL

Procedures in Developing the System

Several elements were brought together to develop the system outlined in this section. A review of literature, which had its bases in systems, computer technology and management, was conducted. Many of the references are footnoted in the previous section of this report. Proven, established systems of classification and retrieval were examined, including the Dewey Decimal System, Library of Congress System, USOE occupational coding, ERIC, DATREX, as well as filing guides such as "Ag-Dex" and "OCCUSORT" from a number of organizations, states, and service areas. In addition, two questions related to filing/retrieval were included in a questionnaire sent out to 940 institutions and agencies across the nation for another aspect of the project. The questions were:

1. Do you have a vocational curriculum materials classification system? (If yes, please send a copy.)
2. What system(s) and/or instrument(s) do you use to evaluate curriculum materials? (Please describe or send a copy.)

Although responses to these questions were limited, several states sent materials relevant to the problem. Additional observations were made during visits to twelve curriculum laboratories in seven states. Consequently, the staff modified existing systems to develop a comprehensive retrieval system designed to meet the needs of the State of Alabama. It is perceived that this system, though somewhat technical, is most nearly capable of allowing personnel to describe, catalog, file and retrieve all forms of vocational curriculum materials needed/requested by the teachers, curriculum developers and other clientele.

Concurrently, this method provides for the integration of a computer-based storage and search system for the entire State which can be managed from a central point and which could be a satellite system of the new data base being created for the Alabama Information and Development Systems (AIDS) to be operated out of the State Department of Education.

The proposed system integrates a number of factors into a multi-numeral code which provides for the identification of the specific document, subject matter area (by O.E. Code) and ERIC (or other systems) number, the competency level, whether it has multiple application (AG., Home Ec., D.E., general studies, etc.); the rated quality of the materials, whether the material has been adapted or is adaptable to the disadvantaged and/or handicapped student, the form in which the material is found (film, filmstrip, hard-bound, soft-bound, etc.), in what library it is located, and where it may be found in that library. This information will be found not only in the central computer but also in each satellite system. Card index and catalog formats may also be generated, thus each publication or other form of curricular material will be indexed in the system.

Considerations in Developing the System

Several factors were considered important in the decision process, they were:

1. The system must enable the proposed CDU to be a collecting point for all types of information related to vocational-technical curricular materials;
2. The system must be feasible for a staff of limited size (at least initially) to operate;

3. The system must facilitate the classification, sequencing, and evaluating of curricular information and materials;
4. The system should build upon and relate to established retrieval systems such as ERIC, Alabama Occupational Information System (AOIS), and Alabama Information and Development System (AIDS);
5. The system should make provisions for a wide range of instructional materials including filsm and other visual aids;
6. The system should provide for both manual and machine access;
7. The system should be compatible with the present decentralized libraries.
8. The system must have as its primary goal the providing of effective and efficient service to vocational educators in Alabama.

The Vocational Curriculum Classification and Retrieval System

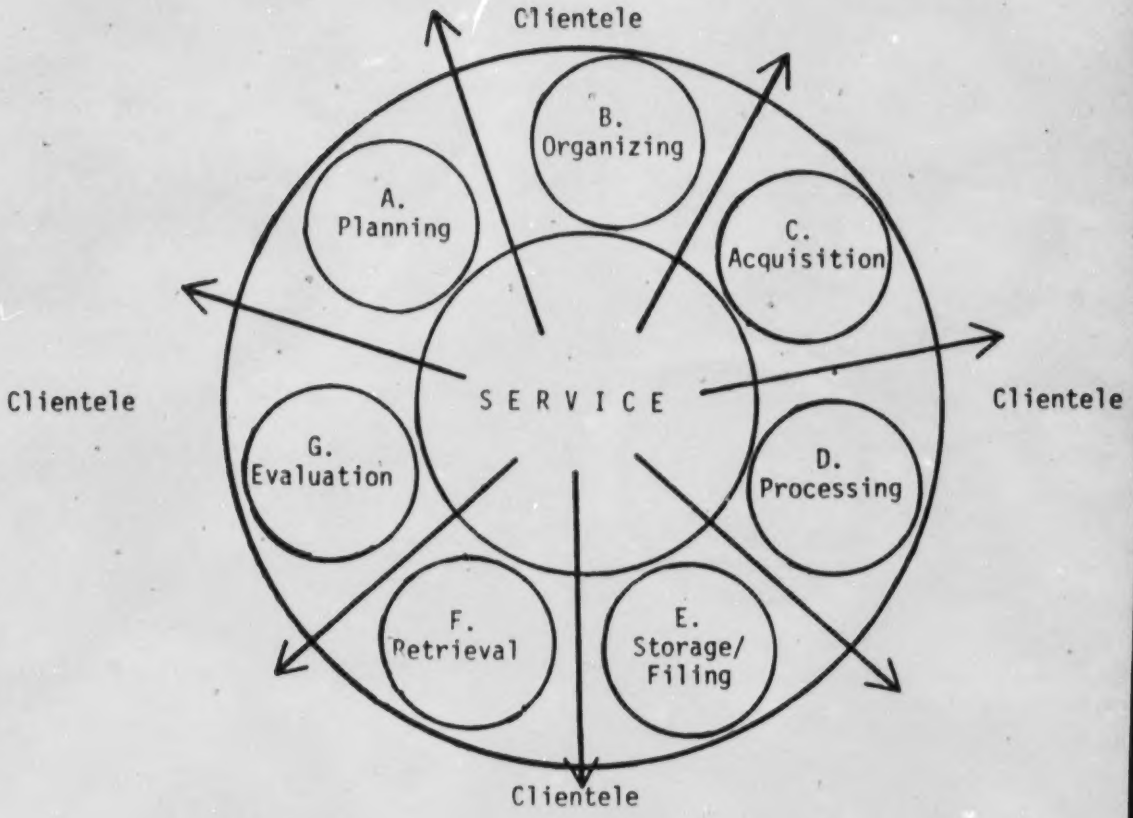
A conceptualized operation model for the Alabama Vocational Curriculum Classification and Retrieval System may be seen in Figure 5 (page 23). Its components are discussed in the text which follows.

A. The Planning Component

The first and certainly one of the most crucial components of the model for a comprehensive vocational curriculum classification and retrieval system is planning. It is necessary that the planners understand the background which promulgated the establishment of the system. The planners should start with the study which indicated the need (the VO-ED COMP Project); they should then analyze the environment, looking at subject coverage, needs to be served, and potential clientele. The planners should conduct an extensive survey of potential users, discuss the proposed system with executive officers in vocational-technical education, seek advice from outside specialists such as those operating similar systems, utilize consultants and submit a precise proposal for support of the system.

FIGURE 5

VOCATIONAL CURRICULUM CLASSIFICATION AND RETRIEVAL SYSTEM



Once the decision has been made to proceed with establishing the retrieval system, operational plans must be made regarding implementing and conducting the system. This process can be expedited by hiring the person responsible for operation of the system--the Resources Researcher--and by securing the strong support of a broadly constituted advisory group. The role of the Resources Researcher is detailed at the conclusion of this section; it is recommended that the Advisory Committee be constituted from the following list:

-- Director of Instructional Services, SDE (serving as chairman)

-- State specialists, Alabama Department of Education for the following Service Areas:

- Agribusiness Education
- Business and Office Education
- Distributive Education
- Health Occupations Education
- Home Economics Education
- Industrial Arts Education
- Trade and Industrial Education

-- A representative from each of the following organizations, agencies, or divisions:

- State Advisory Council for Vocational Education
- Manpower Training Program
- Adult Vocational Education, SDE
- Alabama Industrial Development
- Junior and Community Colleges Division, SDE
- Research Coordinating Unit, SDE
- State Approving Agency, SDE
- State Curriculum Development Unit, SDE
- Technical College Division, SDE
- Vocational Teacher Education programs (one from each institution)

- Adult Basic Education, SDE
- Sex Equity Office, SDE

-- A representative of each of the following levels or specialties:

- Vocational teachers (one from each service area)
- Elementary education specialist
- Secondary education specialist
- Career education specialist
- Local vocational director
- Local superintendent
- Junior college staff member
- Technical institute staff member

-- Others, as needed for broad representation

B. The Organizing Component

This component of the Alabama Vocational Education Curriculum Classification and Retrieval System deals with specific activities to be accomplished by the personnel involved within the system.

Major organizing functions include:

1. Establishing the Advisory Committee and Resources Researcher to manage the system.
2. Developing a staff organization.
3. Establishing a vocational curriculum resources center.
4. Selecting procedures and policies for operating the classification and retrieval system.
5. Clarifying the relationships of the system within the CDU and the RCU.
6. Preparing for the hiring, orientation and supervision of the personnel.
7. Installing the system.

Specific suggestions as to procedures, responsibility and timing for organizing the system are made in the last section of this report entitled, "Implementation and Operation of the System."

C. Acquisition of Materials

The entire process of developing a collection, including locating, selecting and procuring documents and other curricular materials, makes up this component. Policy relative to acquisition is determiend by the present and anticipated mission and user needs for the system. In order to secure the necessary materials, several things are needed: a broadly based, aggressive effort, contact with every possible source; a knowledgeable, vigilant searcher; and a stringent selection policy based on criterion which will effectively screen out nonpertinent, low-value, or duplicate materials--thus controlling cost, size and quality of the collection. Major factors in screening may be seen in Appendix A--The Instructional Materials Assessment Form. Curriculum "packages," books, periodicals, government (U.S., foreign, state, local) documents, technical reports, dissertations/theses, commercial reports/trade literature and audio-visual materials (e.g., tapes films, slides, diagrams, charts, photos, models, etc.) are the kinds of materials appropriate to the search.

Personnel responsible for acquisition--the Acquisition/Processing Specialist and his/her staff--should determine what is available by utilizing the following: existing collection(s) and materials being generated, catalogs from publishers, bibliographies, lists of materials, compilations of curricular materials, advice from the advisory committee, observations of other vocational curricular libraries, requests for publishers to submit material or approval, subscriptions to a publishers' ordering service, invitations for gifts or exchange materials, and contractual services of a reputable publications jobber.

Once identified and "selected in," the materials should be secured following state purchasing/order policies. This ordering can often be expedited by placing orders through an established library or jobber, and/or by using automated systems. Proven good practices in ordering, such as are found in standard

library texts, should be followed. This process can be expedited by utilizing such improved materials as multiple-layer, pressure-sensitive order forms.

D. Processing

The processing component involves the evaluation, classifying, indexing, and cataloging of curricular materials. (Classifying is defined as placing the documents or materials together in a preestablished organization scheme; indexing is providing a locator device to help retrieve an item; cataloging is recording what is available.) This component is the responsibility of the Acquisition/Processing Specialist and his/her aides.

When material is first received, preliminary screening should be done to see if it is already in the system, if it is of transitory value or non-pertinent, and should not, therefore, be held for further processing. If it is to be retained, an identification number unique to the item should be assigned. The material should then be set aside for evaluation on the basis of the instrument found in Appendix A.

The Acquisition/Processing Specialist and his/her aides are responsible for the materials evaluation effort; however, experienced vocational teachers or other consultants should be utilized. A task force of three to five reviewers acting independently and then reaching a consensus would give the best results. (Note: The evaluation instrument may also be utilized by the Instructional Materials Review Committee in Step E of the Alabama Vocational-Technical Education Curriculum Development and Management Model to assess existing materials for use in the State.)

Once evaluated, the material should then be classified, indexed, (using the system suggested in Figure 6) and cataloged. The mechanized COM (computer output microfilm) system is recommended. This is a process in which documents are recorded in a machine-readable format onto microform (microfiche or microfilm). Advantages to the system are: no limit on lines or items; only one

FIGURE 6

ALABAMA VOCATIONAL-TECHNICAL CURRICULUM INDEX FORMAT

Coding:

Item Identification Number (sequenced as materials arrive)

USOE Code Classification (10 Digit Code)

ERIC System Identification Number

Library of Congress Identification

Other Systems Identifiers

Biographical Data:

Title

Author(s)

Publisher, Address

Year Developed/Revised
(Location(s) in Alabama)

Packaging/Cost

Form of Material (Book, film, etc.)

Abstract/Description

ERIC Descriptors

Occupational (Service) Area

Target Grade Level

Readability Grade Level

Analysis for Bias

Special Needs Adaptation/Groups

Quality Rating (from the instrument in Appendix A)

Reviewer Comments

operation is required; and multiple forms of output are available, including user catalogs, printouts of topics searched, manual index cards, duplicate microform, manual searches, automated inventory control, machine ordering, etc.

Because microfiche readers are less than one-third the cost of microfilm readers, and are already available in many areas, it is recommended that the COM catalog be placed on microfiche format. A sample of a machine readable input statement is found in Appendix B.

E. Storage/Filing

The physical arrangement of the curriculum material collection must facilitate ease of retrieval. Arrangement in technical libraries may be by classification, form, or sequence of acquisition. Using the COM technique and the index format suggested, materials may be filed in several ways. If space is a major consideration, filing should be by item identification number (in consecutive order of acquisition); the best overall system would be by USOE code classification. The files/storage should be open to access by users, but under supervision of the staff (Resources Researchers, Acquisition/Processing Specialist, etc.).

This, too, will be facilitated by the COM capability, which frees staff for consulting assistance. A back-up system of microform reproduction of documents should be considered to reduce loss from wear and/or disasters.

F. Retrieval

Locating and securing material from storage in the Vocational Curriculum Resource Center will be facilitated by COM. Visual searches may be made of the index microform or computer searches may be run on the collections. Major retrieval will likely result from inquiries through personal visits, letters or telephone. If the request is made in person, center staff should counsel and assist the individual to locate materials needed. Mail or telephone re-

quests should be logged in on a form such as can be seen in Figure 7, validated (determine if the material is available), defined so as to utilize the index system, and processed (development of a response). A transmittal form or letter should be included, which should call for comments or other feedback from the user. Records should be kept of each activity for later accounting and for material control. The system should provide materials on loan and reproduction of documents at cost-recovery rates. Consultation and other "reader services" (brochures, catalogs, etc.) should be provided free of charge.

G. Evaluation

The final component to the Alabama Vocational Curriculum Classification and Retrieval System model is evaluation, which involves appraisal of the service by the staff, and periodic review by external groups such as the advisory committee. The latter should involved the use of empirical as well as objective data. Factors to be evaluated should be: focus of the system, implementation of the model, efficient use of resources, and program effectiveness. Some key indicators of effectiveness are: number of users served, number of documents secured, number of consultations given, and number and quality of "reader service" material disseminated.

The Center staff should be evaluated annually by the CDU Coordinator along with a subgroup of the Advisory Committee. The resources of the RCU can be utilized for evaluation instruments and techniques. The Resources Researcher and Center staff should constantly evaluate center operations by encouraging user feedback.

H. Service

At the center of the model, permeating all components and reaching out to the clientele through each phase, is service. Major services recommended for the system are as follows:

INQUIRY/REPLY FORM*

Inquiry Control No. _____

1. Date Inquiry Received _____
2. Form of Inquiry: Letter ☐ Phone ☐ Visit ☐ Other ☐ _____
3. Inquiry Addressed to: Institution _____
   CDU ☐ _____ Vocational Curriculum Resource Center ☐ _____
   Individual ☐ _____
4. Reply Requested Within _____ Not Specified ☐
5. Analyst Assigned _____
6. Answer Approved by _____
7. Time Spent on Reply by Staff _____ Clerical _____
8. Date Reply Sent _____
9. Inquiry Identity-Organization _____
10. Address _____
11. Individual _____ Title _____
12. Phone _____ Date of Inquiry _____
13. Inquiry Abstract _____
    _____
    _____
14. Remarks _____
    _____
    _____
15. Date Source _____
    _____
    _____
16. Remarks (Include feedback, if any) _____
    _____
    (Use Other Side of Sheet if Necessary)

*Adapted From: A. M. Weisman Information Systems, Services and Centers, p. 88.

1. Locating and physically providing curricular materials to the users.
2. Identifying available and needed curricular resources for the CDU, and others.
3. Collecting and storing major curricular materials from nationwide sources.
4. Developing and disseminating catalogs of curricular resources.
5. Scheduling utilization of curricular resources.
6. Conducting computer searches for curriculum resources.
7. Reviewing and assessing curricular materials.
8. Consultating with curriculum developers in the CDU.
9. Developing microform and duplication services.
10. Working with the IMRC in review of existing materials.
11. Maintaining contact with and referring requests to other dissemination systems.
12. Assisting in library utilization.
13. Conducting user training programs.
14. Making input into curriculun needs/prioritization studies.
15. Disseminating annotated bibliographies on timely problems.
16. Assisting the CDU in curriculum development, especially materials searches and editing.
17. Locating and encouraging potential users.
18. Maintaining a reference service for "instant answers."
19. Conducting tours for visitors.

I. Linkage Mechanisms

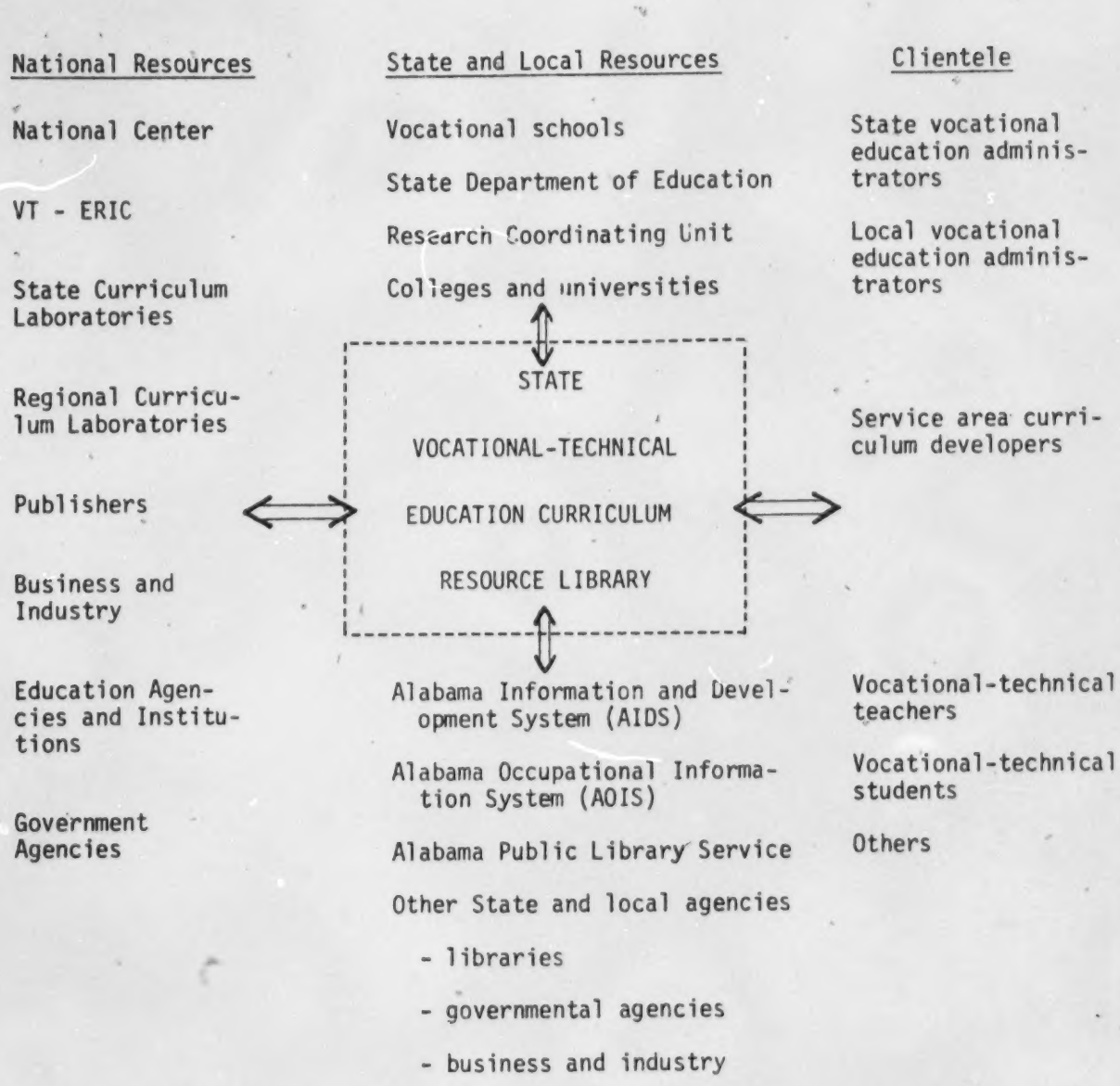
The system of vocational-technical curriculum acquisition, storage, classification, and retrieval should be interfaced with existing information dissemination systems within the State. Further support is given this concept whe

the objectives and program of well-developed State information dissemination systems are seen; most are highly compatible to linkage with a state vocational curriculum retrieval system.

Figure 8 (page 34) illustrates a basic model for linking the State Vocational Education Curriculum Retrieval System to input sectors and user (clientele). The roles within the model allow for two-way transfer of information, but with major conveyance of vocational curricular information to clientele. Feedback is an important part of the process.

FIGURE 8

A LINKAGE MODEL FOR A STATE VOCATIONAL-TECHNICAL EDUCATION CURRICULUM RESOURCE LIBRARY*



* Adapted from William Hull and Gregory Benson, Jr. Installing a Coordinated Information Network in a State Education Agency: A Case Study of the Decision Process in New York. R&D Series #67, Columbus, Ohio: The Center for Vocational-Technical Education, 1972, p. 10.

IMPLEMENTATION AND OPERATION OF THE SYSTEM

The system discussed in the previous section represents a vital component of the proposed Model and Plan for Vocational Education Curriculum Operation and Management in Alabama (publication number six of VO-ED COMP). The following is a brief summary of staffing and procedures in implementing and operating the system.

Staffing the System

According to the proposed VO-ED COMP model[8], a "resources researcher" in the Curriculum Development Unit (CDU) will be responsible for organizing the development of vocational curriculum resources collection or library, which includes the development of a dissemination and retrieval system for all curriculum materials available to the State Department of Education. Once established, the Vocational Curriculum Resource Center is envisioned to expand services to include a film loan system, and an information products (catalog, guides, etc.) dissemination component, as well as collection classification, storage and retrieval functions. Thus a staff of full-time personnel will be needed to operate this expanded program. It is anticipated that the staffing plan will be fully implemented over a period of three to five years as demand for services increases. Projected staff positions, their major functions and qualifications are as follows:

---

[8] See VO-ED COMP Publication number six, "A Vocational Education Curriculum Operation and Management Plan and Model for Alabama", p. 46.

Position	Functions	Qualifications
Curriculum Resources Researcher	Develop Vocational Curriculum Resource Center (library) Coordinate Operation of Center Hire and Supervise Staff Administer the cataloging, filming and retrieval system Work with the Advisory Group Report to CDU Coordinator	Masters degree in Library Science Coursework and expertise in English Professional experience in library work/editing and writing Knowledge of vocational education Ability to effectively supervise subordinates
Search and Utilization Specialist	Develop strategies for locating materials in the system Perform searches for users Assist with information publications Refer users to satellite libraries/ sources Operate the film loan program	Masters degree in Library Science or information science Experience in library and information systems Computer science coursework and experience Knowledge of vocational education Ability to deal effectively with users
Acquisition/Processing Specialist	Acquire materials developed in-state and out-of-state which are appropriate for the system	Masters degree in Library Science Experience in information systems of library work Coursework or experience in computer science

(continued)

Position	Functions	Qualifications
Acquisition/Processing Specialist (continued)	Implement the system of processing materials into the VCR Center Supervise clerical workers involved with processing Maintain contacts with decentralized collections of vocational curriculum materials Supervise filing and storage of vocational curricular materials Manage purchasing of materials not available on a free or exchange basis	Working knowledge of vocational education Ability to keep accurate financial records of purchases Human relations abilities
Secretaries (2)	Type letters and reports File correspondence, financial information, curriculum materials Store curriculum materials Serve as receptionist Operate keypunch Assist with material research	Secretarial preparation Experience in clerical work and computer work Human relations abilities
Library Aides (2-4)	Assist Secretaries and Staff	High School Diploma Good Health; interest

Implementing/Operation of the System

In the previous section, activities within the components of the model were reviewed in somewhat general terms; the identification of what, when, how the activity will occur and by whom is outlined below.

Activity	Procedures	Responsibility
A. Planning the System	Review VO-ED COMP Project Reports; Analyze Alabama VO-ED Curriculum materials, development and dissemination. Assess needs, clientele to be served. - Conduct survey of potential users. - Discuss needs with State VO-ED administrators - Secure advice of experienced consultants. - Observe existing systems in other states. Develop, refine and submit proposal for support of the "Vocational Curriculum Resources Center." Secure approval of Center. Plan for hiring the Resources Researcher. Set up plan for the broadly representative Advisory Committee.	Coordinator of CDU
B. Organizing the System	Hire and orient Resources Researcher. Contact and constitute Advisory Committee. Develop Vocational Resources Center staff. - Develop staff job descriptions. - Outline duties and responsibilities. - Develop announcement, hiring, training and evaluation policies. - Delineate line and staff relationships. - Locate and hire staff.	CDU Coordinator CDU Coordinator and Resources Researcher CDU Coordinator and Resources Researcher in conjunction with Advisory Committee

(continued)

Activity	Procedures	Responsibility
B. Organizing the System (continued)	Develop Center Facilities. - Decide on Center location. - Secure facilities, equipment and supplies. Develop procedures and policies for operating the system. - Review the system model; modify as needed. - Develop a Policies Handbook. - Develop a time/activity line (schedule).	CDU Coordinator and Resources Researcher in conjunction with Advisory Committee
	Put the system into operation. Conduct a trial run of procedures. Modify procedures as indicated. Install the system. Communicate the system to vocational personnel.	CDU Coordinator and Center staff
C. Acquiring Materials	Develop a comprehensive strategy to identify and secure every possible item needed. - Contact all public and private curriculum units. - Utilize computerized systems/ technology. - Advertise for available materials. - Send for free/review copies. - Include audio-visual materials. - Utilize existing collections. - Review materials under development. - Secure input from Advisory Committee. - Invite gift and exchange materials. - Contract with publications jobber. Adhere to State purchasing regulations. - Order through State library or a jobber. - Utilize computer system for ordering. - Use labor efficient methods such as pressure sensitive forms.	Resources Researcher Search and Utilization Specialist Acquisition/Processing Specialist

(continued)

Activity	Procedures	Responsibility
D. Processing Materials	Screen all arriving items for duplicates/value.	Acquisition/Processing Specialist
	Assign identification number.	Secretaries
	Evaluate and classify.	Aides
	- Use appropriate review form. - Assign classification numbers.	
	Index/catalog into the system.	
	- Type master index information onto microform from review form. - Call for catalog, index cards, microfiche copies for satellite libraries.	
	Send materials to storage/files.	
	Aid IMRC Comm. evaluate existing materials.	
E. Storing/Filing Materials	Arrange filing/storage for ease of retrieval.	Acquisition/Processing Specialist
	- Utilize consultants for arrangement. - Consult books on the subject.	Secretaries Aides
	Arrange by USOE code classification (or consecutively by number if space is a problem).	
	Maintain current catalog of materials on hand.	
	Maintain duplicates or microform copy if feasible.	
F. Retrieving Materials	Develop user products.	Search and Utilization Specialist
	- Catalog (annual and quarterly updates). - Announcements. - Guides to visitors, inquiries. - Reports. - Others as needed.	Secretaries Aides
	Set up a procedure for handling requests by mail and telephone.	
	- Use standard request form. - Secure feedback. - Keep records.	
	Provide loan service (schedule, send, etc.).	
	Provide browsing service with staff assistance (and control).	
	Provide for reproduction of materials at reasonable cost recovery.	

(continued)

Activity	Procedures	Responsibility
F. Retrieving Materials (continued)	Conduct computer searches. Conduct user orientation programs. Conduct tours for visitors.	
G. Evaluation of the System	Appraise Center staff annually. Arrange for evaluation of user feedback. Periodically evaluate: - Focus. - Implementation procedures. - Use of resources. - Effectiveness. Consider: - Number of users. - Number of documents secured. - Number/quality of reader source - materials disseminated. - Contact with other agencies.	Resources Researcher CDU Coordinator Advisory Committee RCU

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APPENDIX A

Alabama Vocational-Technical Instructional
Materials Assessment Form

Coding	
Ala. Item Number	_____
USOE Classification	- - - - - - - - - -
ERIC System Identifier	- - - - - - - -
Library of Congress Identifier	_____
Other Systems' Identifiers	_____
	_____
	_____
Biographical Data	
Title	
Author(s)	
Publisher	
Address	
Year(s)Developed/Revised	_____; _____
Other Factors	
Locations in Alabama	
Cost	$_____
Packaging (check one)	__ single item
	__ set of _____ items, packaged together
	__ set of _____ items, available separately

Form of Material

1. Printed (pages_____)
   - ☐ A. Student Manuals
   - ☐ B. Workbooks
   - ☐ C. Pamphlets
   - ☐ D. Reference Books
   - ☐ E. Textbooks
   - ☐ F. Magazines/Periodicals
   - ☐ G. Other_____

2. Audiovisual
   - ☐ A. Graphics/Pictures/Posters
   - ☐ B. Audio Tapes
   - ☐ C. Transparencies
   - ☐ D. Filmstrips
   - ☐ E. Slide Series
   - ☐ F. Records
   - ☐ G. Other

3. Manipulative
   - ☐ A. Puzzles
   - ☐ B. Games
   - ☐ C. Models/Mock Ups
   - ☐ D. Puppets/Figures
   - ☐ E. Laboratory Kits
   - ☐ F. Other _____

Abstract/Description of Material

ERIC Descriptions

Occupational (Service) Area

(Check any appropriate)

___ 1. Agriculture
___ 2. Business Education
___ 3. Career Education
___ 4. Distributive Education
___ 5. Health
___ 6. Home Economics
___ 7. Trade & Industrial
___ 8. Other_____

(Check those appropriate)

Target Grade Level

___ 1. Grades K-1

___ 2. Grades 2-3

___ 3. Grades 4-6

___ 4. Grades 7-8

___ 5. Grades 9-12

___ 6. Post Secondary

___ 7. Adult

___ 8. Other _____

Readability Grade Level

(Directions for use of the FRY System are attached)

___ Not Applicable

___ Readability checked; Level is _____

Formula used:

___ Dale - Chall

___ Fry

___ Spache

___ Other _____

Analysis for Bias

___ Free of Bias

___ Some Bias, Acceptable for School Use

___ Extreme Bias, Unacceptable

Type of Bias (Check any appropriate)

___ ethnic bias

___ religious bias

___ objectionable advertising

___ job denigration

___ sex-role stereotyping

___ age discrimination

___ racial bias

___ other (explain _____)

Special Needs Adaptation

___ Not Adapted to Special Needs

___ Not Adapted, but readily adaptable

___ Adapted to Special Needs

Groups for which Appropriate
(check any appropriate)

___ Socio-economic disadvantaged

___ Hearing Impaired

___ Sight impaired

___ Physically handicapped

___ Mentally deficient

___ Mentally disturbed

___ Other (explain _____

_____)

Quality Rating

(from the attached "Quality Score Worksheet")

_____ Points

_____ Unacceptable (Below 35 Points)

_____ Useful (36-48 Points)

_____ Excellent (49-60 Points)

Comments

_____

_____

_____

_____

_____

_____

_____

FRY'S READABILITY GRAPH TO DETERMINE THE READING LEVEL OF MATERIALS

Directions for Using the Readability Graph

1. Select three one-hundred-word passages from near the beginning, middle, and end of the book. Skip all proper nouns.

2. Count the total number of sentences in each hundred-word passage (estimating to nearest tenth of a sentence). Average these three numbers.

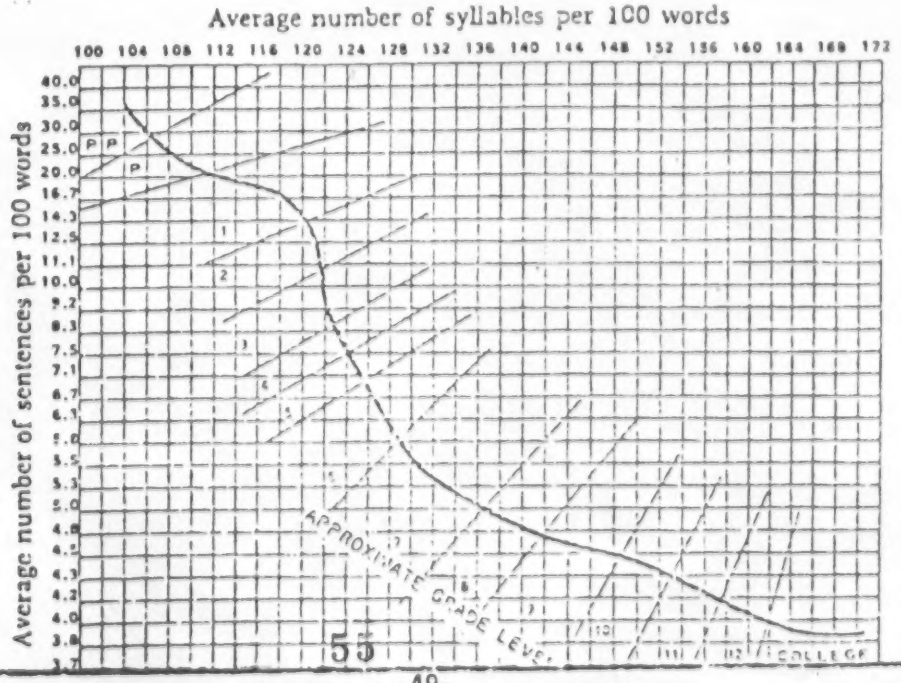
3. Count the total number of syllables in each hundred-word sample. There is a syllable for each vowel sound; for example: cat(1), blackbird(2), continental(4). Don't be fooled by word size; for example; polio(3), through(1). Endings such as -y, -ed, -el, or -le usually make a syllable, for example: ready(2), bottle(2). I find it convenient to count every syllable over one in each word and add 100. Average the total number of syllables for the three samples.

4. Plot on the graph the average number of sentences per hundred words and the average number of syllables per hundred words. Most plot points fall near the heavy curved line. Perpendicular lines mark off approximate grade level areas.

Example

	Sentences per 100 Words	Syllables per 100 Words
100-word sample Page 5	9.1	122
100-word sample Page 89	8.5	140
100-word sample Page 160	7.0	129
	3 24.6	3 391
Average	8.2	130

Plotting these averages on the graph we find they fall in the 5th grade area; hence the book is about 5th grade difficulty level. If great variability is encountered either in sentence length or in the syllable count for the three selections, then randomly select several more passages and average them in before plotting.



Quality Score Worksheet*

/ TASK I. ACCURACY /

(Materials which provide inaccurate or misleading information have little utility in the total teaching-learning process.)

IA. To what extent is the content objective and accurate?

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Distorted or incorrect — Realistic, impartial and correct

IB. To what extent is the content timely and up-to-date?

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Outdated in information, ideas and illustrations — Current in information, ideas and illustrations

IC. To what extent is the content clear and complete?

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Vague and inconclusive — Sufficiently detailed to prevent misinterpretation

☐ TOTAL SCORE FOR TASK I

COMMENTS_____

/ TASK II. APPROPRIATENESS /

(Appropriateness of materials should be judged in relation to the target population and the total subject matter area.)

IIA. To what extent are the language and/or visuals appropriate to the target population?

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Stilted; antiquated language used; trite or too complex — Fluent and easy to understand; appropriate to maturity level of learner

* Adapted from "Instructional Materials for Distributive Education," Cornell Institute for Research and Development in Occupational Education, 1975, pp. 9-12.

IIB. To what extent is the content appropriate to the target population?

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Lacking in challenge or too difficult to comprehend — Challenging but not beyond the ability of the learner

IIC. To what extent is the content relevant to the total subject matter area?

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Unnecessary; emphasizes an unimportant aspect of the subject — Important and necessary to the subject matter area

☐ TOTAL SCORE FOR TASK II

COMMENTS _____

_____

_____

_____

/ TASK III. VERBAL AND VISUAL FLUENCY /

(Instructional materials should make learning easier by presenting the subject matter in a simple and attractive way.)

IIIA. To what extent is the material appealing to the learner?

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Unattractive; cluttered; poor in design — Attractive; simple; effective in design

IIIB. To what extent is the organization of the material easy to follow?

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Too many ideas treated inadequately; distracting or extraneous parts — Ideas developed adequately in a logical manner; clear general theme

IIIC. To what extent is the material interesting and stimulating?

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Treats too few ideas in a redundant manner; dull and boring — Contributes to the development of critical thought and creativity

☐ TOTAL SCORE FOR TASK III

COMMENTS _____

_____

/ TASK IV. USEFULNESS AND VERSATILITY /

(Instructional materials should be useful in a variety of situations and adaptable to varied needs of student.)

IVA. To what extent can the material be used with learners having varying needs?

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Suitable for a limited group of learners

Appropriate to target group with varying level of maturity, economic backgrounds and learning styles

IVB. To what extent can the material be used in a variety of classroom organizational patterns?

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

No provisions for adaptability; useful in only one type of situation

High level of adaptability; suitable for varying classroom formats

IVC. To what extent is cost and packaging of the material consistent with the degree of usability?

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Poorly constructed or packaged; more costly than is justified by probable use

Durably packaged; easy to handle and store; available at a cost commensurate with value

☐ TOTAL SCORE FOR TASK IV

COMMENTS_____

/ SUMMARY /

TASK POINTS	MAXIMUM POINTS POSSIBLE	SCORE OF TASK
I	15	
II	15	
III	15	
IV	15	
TOTAL	60	

Overall assessment of material (check one)

- ☐ Unacceptable; below 35 points
- ☐ Useful; 36 to 48 points
- ☐ Excellent; 49 to 60 points

Does the rating above accurately reflect your general assessment of the material?

☐ Yes ☐ No (explain)

COMMENTS _____

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APPENDIX B - Input Form for Computer Output Microfilm (COM) System

MACH 9 12-14-77 C. Jones

30047

#SDN0 33101958

#110 Alabama. $b Dept. of ■Pensions and Security #245 $00 Annual report. $c v.1- #260 Wetumpka, Montgomery, etc., Ala., $c 1936- #300 v. ■■$b illus Ytration #500 1936-54 iss■ued as Alabama. Dept. of Public Welfare #500 Beginning in 1949 t■he annual report forms the last issue of Alabama Soc■■ial Welfare. These issues are bound separately as the annual report. #650 Public welfare $z Alabama #710 Alabama soci■al welfare #929 C #930 36 Y0.9761

#SDN0 33101962

#110 Alabama. $b Development Office

#245 Alabama transportation bibliography #260 Montgomery, Ala., $c 1973. #300 86 p. #650 Transportation $z Alabama $x Bibliography #930 R016.385

#SDN0 33101964

#110 Alabama. $b Development Office #245 $14 The demography of Alabama; $b population and population change. #260 Montgomery, Ala., $c 1974 #300 28 p. $b illustration, maps #651 Alabama $x Statistics, Vital #930 R312.09761

#SDN0 33101967

#110 Alabama. $b Development Office #245 Land use planning information: $b basic considerations. #260 Montgomery, Ala., $c 1974. #300 69 p. #650 Regional planning $x Bibliography #650 Land $x Bibiliography #929 C #930 016.3337

#SDN0 33101968

#110 Alabama. $b Development Office. #245 Preli■minary goals for Alabama. #260 Montgomery, Ala., $c 1974 #300 unpaged. $b illustration #650 Regional planning $z Alabama #930 R309.25

#SDN0 33101969

APPENDIX C

VOCATIONAL-TECHNICAL EDUCATION CURRICULUM REVIEW,
DEVELOPMENT AND EVALUATION MATRIX

EVALUATION QUESTIONS	DATA NEEDED	ANALYSIS OF DATA
1. Objectives A. Are the objectives appropriate to validated job tasks in the subject area? B. Are the objectives stated in behavioral terms? C. Are the objectives stated in terms easily understood by the students? D. Is the list of objectives complete?	A. List of validated tasks. B. List of objectives.	A. Compare objectives to tasks. B. Evaluate objectives.
2. Learning activities. A. Are the learning activities appropriate for the objectives? B. Are the learning activities developed in a sequential and hierarchical manner? C. Are appropriate resource materials available? D. Are the references listed in a manner that will enable the student to locate pertinent information?	A. List of objectives. B. Copies of resource materials. C. Copies of learning activities.	Compare objectives with resource materials and learning activities.

VOCATIONAL-TECHNICAL EDUCATION CURRICULUM REVIEW, DEVELOPMENT AND EVALUATION MATRIX (continued)

3. Student resource materials (manuals, etc.) A. Is the content accurate and appropriate?	A. Pilot-test draft of materials. B. Evaluation of content by two or more content specialists. C. Evaluation of appropriateness by two or more teachers.	Teachers and content specialists should read the materials making note of any discrepancies or inaccuracies in the material. - The evaluation should be followed by a conference of the teachers, content specialists and the curriculum staff. Following the conference a report of criticisms and proposed corrections should be sent to the curriculum committee and council for information purposes.
B. Is the reading level appropriate?	A. Pilot-test draft of materials. B. Evaluation by two or more teachers. C. A reading level estimating system (i.e. Graph for estimating readibility by Edward Fry, Rutgers University Reading Center, New Jersey).	Teachers comments concerning pilot test.
C. Is the format correct?	A. Pilot-test draft of materials. B. Format outline.	Compare materials with format outline.
D. Is the content appropriate to objectives?	A. Pilot-test draft of materials. B. List of objectives.	Compare content with stated objectives.
4. Field test site. A. Was the selection of field test sites based on pre-determined criteria?	A. A list of criteria for field test sites. B. The qualifications of each field test site.	Comparison of qualifications with criteria.
B. Were field test teachers adequately trained and given adequate instructions?	A. An outline of instructions and training method. B. Teacher questionnaire related to field procedures and problems. C. Inservice activities planned.	Compare analysis of instruction and training method with an analysis of the questionnaire response and activities planned.

VOCATIONAL-TECHNICAL EDUCATION CURRICULUM REVIEW, DEVELOPMENT AND EVALUATION MATRIX (continued)

5. Criterion Referenced Tests. A. Do the criterion test items relate to the objectives?	A. List of objectives. B. Criterion test items.	Compare objectives and test items. There should be two or more test items for each objective.
B. Did gain scores indicate significant gains in knowledge?	Pre- and post-test answer sheets.	The answer sheets should be designed for machine grading. A computer program may be developed to accept information directly from the answer sheets. Compute the t-test for related measures.
C. Did 85% of the students correctly answer 85% of the test items (or other similar criteria)	Post-test scores	Compute percentages. The computer program should be designed to handle this.
D. Is the test reliable?	A. The questions most frequently missed on pre-and post-tests. B. The questions that were seldom if ever missed. C. The incorrect responses that were selected. (the above items refer to multiple choice questions).	Item analysis. The computer should be designed to handle this.
E. Is the test easy to read and understand? F. Are the test items clear and to the point?		
6. Performance (skill) Test. A. Does the performance (skill) test measure appropriate skills?	A. Performance test or check sheet. B. Performance objectives. C. Performance scores. D. A list of tools, equipment, and materials. E. A list of tools, equipment and materials actually used in the skill test and a report of their state of repair.	At least two instructional area specialist should read the test for content and appropriateness, and time allowed to complete the test. (Timed tests may not always be appropriate)
B. Are instructions and directions clear and easily understood by the students? C. Is the test compromised by unnecessary verbiage?		Compare the list of tools, materials, and equipment needed with those available. (All that were not in a good state of repair should be considered "not available

VOCATIONAL-TECHNICAL EDUCATION CURRICULUM REVIEW, DEVELOPMENT AND EVALUATION MATRIX (continued)

D. Are the skills being tested those that were taught? E. Were the necessary materials, tools, and equipment available to the student when tested? F. Were the tools and equipment in a good state of repair?	F. User evaluation of skills test (teachers and students). G. Copies of resource materials and study used to teach the skills.	(Performance scores are meaningful only if the above items are given high ratings. Unusually high or low performance scores require an evaluation of the entire procedure even if the above items are given high scores.

(Due to the possible variability of available equipment, several variations of a skill test should be constructed. Only field test sites with the appropriate equipment for teaching and testing the particular skills should be selected. Other variations of the skill test should be spot-checked for validity and reliability after the instructional material has been distributed.)

7. Is the developmental process on schedule?	A. Time-line or PERT chart listing the stages to be completed and the dates or time allowed for each stage. B. A chart or listing indicating the beginning and ending date for each phase or stage. C. A list of problems that may have altered the schedule. D. Progress reports at predetermined times (including B and C above).	A comparison of the time-line with completion times. The list of problems encountered should be used to indicate causes and lead to a planning session for the purpose of eliminating the problems by developing alternative schedules.

Source: Vocational Curriculum Management System Project Report, University of Georgia, Athens, Georgia, 1978.